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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,628	07/16/2003	Shinichi Miyazaki	0229-0757P	7288
2292	7590	01/27/2005	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH			FISCHER, JUSTIN R	
PO BOX 747			ART UNIT	
FALLS CHURCH, VA 22040-0747			PAPER NUMBER	

1733

DATE MAILED: 01/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/619,628

Applicant(s)

MIYAZAKI ET AL.

Examiner

Justin R Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5 and 12-16 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5 is/are rejected.
- 7) ☒ Claim(s) 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/783,988.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>071603</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 2-5 and 15, drawn to a pneumatic tire having a specific steel cord construction in a carcass layer, classified in class 152, subclass 556.
 - II. Claims 12, and 13, drawn to a pneumatic tire having a specific steel cord construction in a bead reinforcing layer, classified in class 152, subclass 539.
 - III. Claims 14 and 16, drawn to a pneumatic tire having a specific steel cord construction in a carcass and belt layer, classified in class 152, subclass 451.
2. Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention I has separate utility such as reinforcement in a tire carcass structure where the bead reinforcing structure of invention II is not present. Also, invention II has separate utility such as reinforcement in a tire belt structure where the carcass structure of invention I is not present. See MPEP § 806.05(d). It is further noted that while claim 12 as currently drafted appears to be dependent from claim 2, it is believed that claim 12 is supposed to be in independent form and only require a bead reinforcing cord layer be formed of the claimed cords (based on the manner in which the claims were originally presented in the parent

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application and the inclusion of claim 15 in the current application- no generic claim in current application).

3. Inventions I and III are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination (claim. 14) recites particular characteristics of the subcombination (carcass structure- claim 2) but there is evidence that the particular characteristics of the subcombination are not essential to the combination. The characteristics of the belt structure can be used as a basis for showing that the particulars of the carcass structure do not constitute the sole distinguishing novelty in the combination. The subcombination has separate utility such as use in a tire structure where the specific belt structure of the combination is not present. It is further noted that while claim 14 as currently drafted appears to be dependent from claim 2, it is believed that claim 14 is supposed to be in independent form and require a carcass and belt structure be formed of the claimed cords (based on the manner in which the claims were originally presented in the parent application- no generic claim in current application).

4. Inventions II and III are related as independent inventions, each having a unique and separate means for establishing patentability. In this instance, invention II is directed to a pneumatic tire having a specific bead reinforcing structure while invention

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III is directed to a pneumatic tire having a specific carcass and belt reinforcing structure.

It is evident that invention III does not require the particulars of the bead reinforcing structure required by invention II and invention II does not require the carcass cord construction not the belt structure detailed by invention III. As such, these inventions are properly restrictable as being directed to patentably distinct subject matter.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. During a telephone conversation with Mr. Carl Thompson on January 21, 2005 a provisional election was made without traverse to prosecute the invention of a pneumatic tire having a specific cord construction in the carcass, claims 2-5 and 15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 12-14 and 16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

7. Rejoinder will be considered upon the indication of allowable subject matter depending on the basis thereof.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baillievier (US 4,268,573, of record) in view of Yanagisawa (US 5,772,809, of record). Baillievier is directed to the manufacture of metal reinforcing cords for elastomeric articles, including the carcass assembly of motor vehicles (Column 7, Lines 5-15). The reference describes the use of multiple bundles (2-4), wherein each bundle is composed of 2-19 filaments having a diameter less than 0.40 millimeters, preferably 2-10 filaments (Column 1, Lines 66-68 and Column 2, Lines 30-34). The reference, however, is silent with respect to the use of wavy filaments and thus necessarily fails to establish the claimed quantitative relationships. Yanagisawa is similarly directed to a metal reinforcing cord formed of multiple bundles, wherein said bundles contain at least one wavy filament to provide the necessary spacing between filaments and optimize the rubber penetration (Column 4, Lines 53-58). This structure provides increased corrosion resistance, which is desired in all tire reinforcing elements, including carcass elements, and ultimately results in improved tire durability. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include at least one wavy filament in the cord construction of Baillievier in view of Yanagisawa, as further detailed below.

As to the cord construction, the metallic reinforcing cord of Baillievier contains the same general filament/bundle construction of the claimed invention, with the exception of including at least one waved filament. However, Yanagisawa, as noted above, is directed to a similar filament/bundle construction for tires in which at least one wavy filament is used to optimize the rubber penetration between filaments. Regarding the

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wavy filament properties required by the claimed invention, it is noted that the ranges are broad and conventional and would have been readily appreciated by one of ordinary skill in the art at the time of the invention. Furthermore, the at least one wavy filament of Yanagisawa has the claimed wave pitch and wave height (Column 4, Lines 53-65). Lastly, while it is recognized that Baillievier fails to provide a range for the cord twist pitch, applicant's range of between 10 and 25 millimeters defines conventional cord dimensions and one of ordinary skill in the art at the time of the invention would have readily appreciated and expected the cord construction of Baillievier to have a cord twist pitch in accordance to the limitations of the claimed invention. It is further noted that all the examples of Yanagisawa (Table 1- Invention Examples 1-4) include a cord twist pitch within applicant's range.

Further regarding the cord construction, Baillievier suggests a preferred range for the number of filaments between 2 and 10 (Column 1, Lines 66-68). In this instance, the reference describes a plurality of embodiments that meet the limitations of the claimed invention (number of filaments and number of bundles). For example, the following cord constructions fall within the ranges suggested by Baillievier: 2 bundles/4 filaments, 2 bundles/5 filaments, 2 bundles/6 filaments, 3 bundles/2 filaments, 3 bundles/3 filaments, 3 bundles/4 filaments, 4 bundles/2 filaments, and 4 bundles/3 filaments. It would have been within the purview of one of ordinary skill in the art at the time of the invention to select one of the aforementioned cord constructions depending on the type of tire and desired carcass reinforcement structure absent any conclusive showing of unexpected results.

As per claim 5, Yanagisawa suggests that at least one waved filament should be incorporated into a filament/bundle construction in order to produce the necessary filament spacing. Therefore, when the bundles of Baillievier are formed of more than 2 filaments, the inclusion of at least one wavy filament leads to a plurality of embodiments in which multiple wavy filaments are together with unwaved filaments. For example, if each bundle consists of 3 filaments, the following embodiments are suggested: 1 wavy/ 2 unwaved, 2 wavy/1 unwaved, or 3 wavy. Furthermore, the use of different wave constructions in adjacent wavy filaments is a known filament design in the formation of tire cord constructions, it being further noted that Baillievier does suggest the use of different configurations for adjacent filaments in a given bundle (Column 6, Lines 50-60).

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baillievier as applied to claim 2 above, and further in view of Miyazaki (JP 2000-045189, of record). Yanagisawa and Baillievier are applied in the same manner as set forth in the rejection of claim 2 above. The references, however, do not provide a quantitative relationship between the cord twist pitch and the bunch or bundle twist pitch. Miyazaki, though, is similarly directed to a carcass reinforcing element formed of individual bunches or bundles in which the bunch twist pitch is between 3 and 20 times the cord twist pitch in order to optimize rubber penetration and ultimately increase the tire reinforcement structure. It would have been obvious to one of ordinary skill in the art at the time of the invention to form the bunch twist pitch and cord twist pitch in accordance

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to the limitations of the claimed invention in view of Miyazaki since the aforementioned benefits are desirable in all cord reinforced elements, including carcass structures.

Allowable Subject Matter

11. Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art references of record failed to disclose, suggest, or teach a pneumatic tire construction having a carcass layer and a bead reinforcing layer formed of the specific reinforcing elements defined by the claimed invention.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Justin Fischer

January 25, 2005